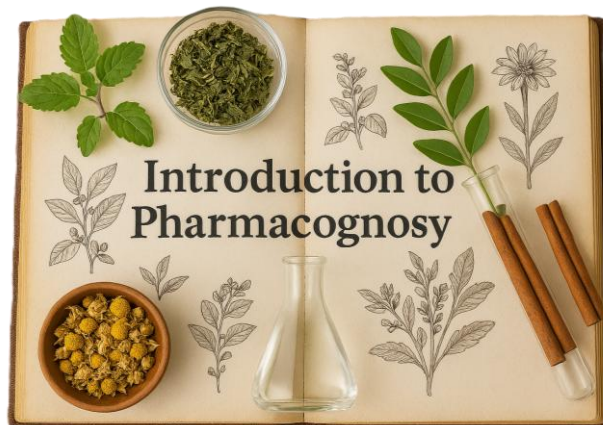


Introduction to Pharmacognosy

Introduction to Pharmacognosy

Definition

- The branch of pharmaceutical sciences that deals with the study of drugs of natural origin, encompassing their biological, chemical, biochemical, and physical properties.
- It includes the study of crude drugs derived from plants, animals, microbes, and marine organisms, as well as other natural sources.
- The term originates from two Greek words:
 - **pharmakon** meaning "drug,"
 - **gnosis** meaning "knowledge."
- Hence, pharmacognosy literally refers to the "knowledge of drugs" (especially those derived from natural sources).



History

Ancient Civilizations:

- The use of natural products as medicines can be traced back to ancient civilizations like those of Egypt, India (Ayurveda), China (Traditional Chinese Medicine), and Greece.

Early Documentation:

- The Ebers Papyrus (circa 1500 BCE) from Egypt documents hundreds of herbal remedies.
- In India, the Charaka Samhita and Sushruta Samhita describe medicinal plants and formulations.
- Dioscorides, a Greek physician (1st century CE), wrote "De Materia Medica," a crucial text describing numerous medicinal plants and their uses.

Middle Ages to Renaissance:

- Herbalists and apothecaries in Europe preserved knowledge on medicinal plants through herbals and manuscripts.
- The Renaissance era saw an upsurge in botanical gardens and systematic study of medicinal plants.

Modern Era:

- With advances in chemistry during the 18th and 19th centuries, isolation of active constituents (e.g., morphine from opium, quinine from cinchona bark) began to shape modern pharmacognosy.
- Development of phytochemistry and molecular biology in the 20th century expanded the discipline into the discovery of new drugs from natural sources.



Ancient Civilizations

Early use of natural products as medicines

Documentation of herbal remedies in ancient texts

Early Documentation



Middle Ages to Renaissance

Preservation of knowledge through herbals and manuscripts

Advances in chemistry and molecular biology

Modern Era



Ancient Civilizations

Early use of natural products as medicines

Documentation of herbal remedies in ancient texts

Early Documentation



Middle Ages to Renaissance

Preservation of knowledge through herbals and manuscripts

Advances in chemistry and molecular biology

Modern Era



Scope and Development of Pharmacognosy

- Pharmacognosy has evolved to include multiple disciplines, making it a critical area of study in pharmaceutical sciences.

Scope of Pharmacognosy

1. **Identification and authentication of crude drugs** – Recognizing and differentiating medicinal plant materials.
2. **Isolation of bioactive compounds** – Extracting medicinal substances from natural sources.
3. **Phytochemistry** – Studying the chemical composition of plants and their medicinal properties.
4. **Pharmacological evaluation** – Testing natural products for biological activity.
5. **Biotechnology and tissue culture** – Producing medicinal compounds using biotechnology.
6. **Quality control and standardization** – Ensuring purity, potency, and safety of herbal medicines.
7. **Herbal drug formulation** – Developing natural products into pharmaceutical forms.

Development of Pharmacognosy

- Advances in chromatography, spectroscopy, and molecular biology have improved the analysis of natural compounds.
- The increasing demand for herbal medicines and natural products has led to research on sustainable sources and biotechnological production.
- Pharmacognosy plays a role in discovering new drugs, such as antibiotics and anticancer agents from natural sources.



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